EXPRESS MAIL LABEL NO. EV514605297US
Attorney Reference Number 1505-65985-02

NOVEL CLASS OF SUPERLATTICE MATERIALS AND SUPERLATTICE PRECURSORS, AND METHOD FOR THEIR MANUFACTURE AND USE

ABSTRACT

The present disclosure concerns novel materials comprising at least two crystalline materials. In certain embodiments, at least one of the crystalline materials is a diffusion barrier, and at least one material has a high power factor. The disclosed materials are particularly useful as superlattices, particularly thermoelectric superlattices, and superlattice precursors. A method for synthesizing such superlattices is provided. An embodiment of the method includes using Modulated Elemental Reactants (MER) to deposit layers of superlattice precursor materials, followed by annealing to yield bulk superlattice materials.